SOFTWARE REVIEWS

Topics in International Health CD-ROM Series—Nutrition. The Trustee of The Wellcome Trust, London, United Kingdom, 2000. CAB Publishing, CAB International, 10 East Fortieth Street, Suite 3203, New York, NY 10016; 800.528.4841. System requirements: Pentium 120 MHz processor or better; Windows 95, 98, 2000, or NT; 32 MB available RAM, monitor capable of displaying 24-bit color (true color) at 800 × 600 resolution, CD-ROM drive, and Video for Windows (can be installed from the CD). Macintosh version not available. Standalone pricing: $195 (institutional), $55 (student or individual), $80 (developing country) per program except for Trachoma which is $80 (institutional), $35 (student or individual), $45 (developing country). Single-site network pricing is dependent upon the ordering institution's country category (developing versus developed) and the number of simultaneous users. See http://www.cabi.org/Publishing/Products/CDROM/TIH/price.htm for complete pricing information.

Nutrition is one of eleven programs available in the Topics in International Health (TIH) CD-ROM Series. The other programs in this series are Diarrhoeal Diseases, HIV/AIDS, Leishmaniasis, Leprosy, Malaria (second edition), Schistosomiasis, Sexually Transmitted Diseases, Sickle Cell Disease, Trachoma, and Tuberculosis. A twelfth program, Acute Respiratory Infection, is planned. See www.cabi.org/Publishing/Products/CDROM/TIH/ for information about the other programs in the TIH series. Designed for use as an educational resource in tropical and international health, this series is aimed at medical and life sciences students, teachers, health care professionals, academics, and researchers. Each program provides three complementary resources—interactive tutorials that provide a self-directed learning framework with clear learning objectives, self-assessment tests, references to encourage further reading, and summaries to reinforce key points; an image collection that is a searchable database of photographic images and accompanying information useful as a detailed reference source or for examples of practical exercises and lectures; and a glossary that defines the medical and scientific terms used in the tutorials and image collection.

Nutrition has twelve interactive tutorials: overview, epidemiology and aetiology of malnutrition, malnutrition and infection, maternal and child health, prevention of malnutrition, assessment of nutritional status, treatment of severe malnutrition in children, emergency situations, vitamin A deficiency, iron deficiency anaemia, iodine deficiency disorders, and diet and chronic diseases. Clicking on a tutorial brings up a window with help and exit buttons at the top of the screen and main menu, notepad, references, glossary, history, contents, find, and left and right arrow buttons at the bottom of the screen. The main menu button takes one back to the list of tutorials. The notepad is a convenient feature that allows one to make notes while using the program. These notes must be saved to be available for viewing in the next tutorial. It would be helpful if the program alerted one when there is unsaved work in the notepad before shutting down. The references button only displays on those screens for which there are associated references, where they are displayed in a separate window. The glossary also opens in a separate window and can be printed out in its entirety if desired. The history button shows a list of the most recently visited screens. The contents button presents an outline of the tutorial's contents; the find button allows one to search for specific text; and the left and right arrow buttons allow one to move through the screens one at a time. Underlined text is hyperlinked; clicking on underlined text will link to additional related information. Hyperlinked information appears in a new window, and the previously displayed window disappears.

Each of the program's peer-reviewed tutorials lists four or more clear objectives and has at least four assessment tests and one overall tutorial assessment test. The tutorials use a very nice combination of photos, illustrations, charts, and tables. Lots of color is used, and each tutorial incorporates at least some animation. The language style is simple and direct. Words or phrases that the producers feel may be unfamiliar to users are hyperlinked to definitions. At any point in the tutorials, one can jump to another part of the program to review specific information. Each tutorial is concluded with four or more summary statements. The last screen of each tutorial gives the user options for exploring further information. The assessments are well done. They are provided in various formats including true-false, multiple choice, and fill-in-the-blank questions, and they reinforce what the student is learning without being overly difficult.

The image collection consists of 1,104 images, mostly photographs, which can be viewed one screen at a time. Alternatively, one can retrieve all of the images that match a particular search strategy. These images can then be saved as a group and recalled for viewing at a later time—an excellent feature for teaching purposes. Each image screen includes the image title and description as well as a keyword search tab (keywords are terms used to index an image), a text search tab (for free-text searching), a search history tab (showing

searches already completed), a thumbnail view tab (to view six thumbnail images at a time), and a gallery view tab (to view twenty-four images at a time). The keyword search tab also includes a ''Create a search'' box for creating canned keyword searches using Boolean logic. The images are clear, detailed, and uniformly high quality.

The third program component is the glossary that is accessible as a standalone resource or from within the tutorials and image collection. The glossary defines words in a pop-up window that can contain other hyperlinked words that are linked to their definitions. Using sound and including pronunciations would have been a nice enhancement to the program. The glossary is also accessible from the image collection.

Although the only telephone number supplied for technical support is a United Kingdom number (+44.0.1491.832111), an email address is also provided (cabi@cabi.org).

This reviewer found Nutrition to be extremely informative and very well designed. It includes a good mix of photographs, illustrations, charts, and tables and uses color and animation effectively and not excessively. Particularly impressive were the variety of assessment tests, the breadth and depth of the image collection, and the pricing sensitivity for developing countries, where this product may be especially useful.

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Bones of the Skull: A 3-D Learning Tool. Dispensa M, Duncan J, Moon J, Alessi S. Hardin Health Sciences Library, University of Iowa, Iowa City, IA, 2000. Downloadable for free at www.lib.uiowa.edu/commons/skullvr/; CD-ROM version available for $6.00 plus shipping and handling. Recommended requirements for Macintosh: PowerPC 120 MHz or greater, 20 MB RAM available, QuickTime 3.0 or higher. Recommended requirements for Windows 95/NT/2000: Pentium II 200 MHz or greater, 32 MB RAM available, QuickTime 3.0 or higher.

QuickTime VR Anatomical Resources. Nieder G. Department of Anatomy, School of Medicine, Wright State University Dayton, OH, 1999. Downloadable for free at www.anatomy.wright.edu/QTVR/qtvr.html. Requires installation of free QuickTime VR plug-in available from Apple Computer at www.apple.com/quicktime/.

Yorick: The VR Skull. Scott J, Nieder G, Anderson M. Department of Anatomy, School of Medicine, Wright State University, Dayton, OH, 1999. CD-ROM version available for $5.00; includes additional program, Beyond Vesalius (not reviewed). See www.neuro.wright.edu/QTVR/Yorick/lostFiles.html for ordering information. Requirements for Macintosh: any Power Macintosh (100 MHz or better recommended), System 7.5 or later, QuickTime 2.5 or later, including the QuickTime VR extension (installer included with program), 94 MB hard drive recommended. Requirements for Windows 95, 98, or NT: 486/66 MHz (100 MHz or better Pentium recommended), 8 MB of free RAM, VGA display capable of 16-bit color at 640 × 480 pixels, QuickTime for Windows 2.1.2 with QuickTime VR extensions (installer included with program), 10 MB of free RAM, display capable of 16-bit color (thousands of colors) at 640 × 480 pixels, 94 MB hard drive recommended.

Bones of the Skull: A 3-D Learning Tool, QuickTime VR (QTVR) Anatomical Resources, and Yorick: The VR Skull are instructional software programs developed at academic medical centers for teaching anatomy and osteology of the skull. Bones of the Skull was developed at the University of Iowa and both QTVR Anatomical Resources and Yorick were developed at Wright State University. For the purposes of this review, Yorick and QTVR Anatomical Resources are treated as companion programs with the emphasis of the review on the QTVR Anatomical Resources program. Each of these three programs is available at no cost or minimal cost and uses virtual reality (VR) technology to show the three-dimensional relationships of anatomical structures. For this review, the program is the version available for download from or use via the program's Website. Information presented in the review about the CD-ROM version of the Bones of the Skull and Yorick programs comes from descriptive or promotional information on those programs' Websites. A Web-based version of Yorick is in preparation. The programs were tested on two Macintosh G3s.

Virtual reality in this context means that these programs include interactive, graphical VR objects that can be rotated by users in all three dimensions in order to view all aspects of the object. Virtual reality ''movies'' come in two basic types at this time: panoramic VR and object VR. Both programs are comprised mostly of object VR, which allows manipulation of the object—almost as if one were holding it in one's hand and could turn it in any direction. QTVR Anatomical Resources includes a few panoramic VRs that differ by allowing the user to move through and within a more complex object—usually as if it were a building and the user were walking or flying through the building space. Developers of both programs are passionate about the potential of this technology for